

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/692,775	GOODMAN, KENNETH R.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Victor J. Taylor	2863	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 26 September 2006.
2. ☒ The allowed claim(s) is/are 1-13, 16-20 and 22-30.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li>1. <input type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br/>Paper No./Mail Date <u>6/16/2006</u></li> <li>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material</li> </ol> | <ol style="list-style-type: none"> <li>5. <input type="checkbox"/> Notice of Informal Patent Application</li> <li>6. <input type="checkbox"/> Interview Summary (PTO-413),<br/>Paper No./Mail Date _____.</li> <li>7. <input type="checkbox"/> Examiner's Amendment/Comment</li> <li>8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance</li> <li>9. <input type="checkbox"/> Other _____.</li> </ol> |
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### **DETAILED ACTION**

1. Claims 1-30 are pending. The applicant canceled claims 14, 15 and 21 therefore, claims 1-13 and 16-20 and 22-30 are presented for examination.

#### ***Response to Arguments***

2. Applicant's arguments see the amendments to the claims and the arguments, filed 26 September 2006 with respect to the 101 rejections have been fully considered and are persuasive. The 101 objections to the claims of 21 June 2006 in view of the amendment is moot and has been withdrawn.
3. Applicant's arguments, see the amendment, filed 26 September 2006, with respect to the amendment to the claims have been fully considered and are persuasive. The 102 (b) rejection of 21 June 2006 is moot and has been withdrawn.

#### ***Allowable Subject Matter***

4. Claims 1-13, 16-20, 22-30 are allowed.
5. The following is an examiner's statement of reasons for allowance:  
The method and apparatus for remote control of a downhole BHA tool based on the autocorrelation of first and second signal command sequences with repeating steps of using a "a priori" signal of unknown or undefined waveform shape correlated to the signal shape to reliably distinguish intentional changes from random pressure fluctuations in the borehole by using autocorrelation of pressure amplitude to send the command signals to the BHA tool by controlling the timing or the number of signal repetitions in the signal timing sequence is not found in the cited art of record.

Therefore;

I. The system in claim 1, for the controller system for use in the wellbore with the controller tool located in the well using the command signal source wherein the controller is responsive to a repeating command signal wherein the command is a repeat of a first command signal and wherein the first signal and the repeating signals are previously unknown to the controller with the controller responsive to the repeating command signal by actuating the borehole tool wherein the controller is configured to distinguish the first command signal from the noise based on the signal characteristic of the first command signal and using the result to actuate the drill bit tool in the formation is not found in the cited art of record.

It is these limitations expressed in each of these claims and not found, taught, or suggested in the prior art of record, that makes these claims allowable over the prior art.

Claims 2-9, 22-23 and 28-30 are dependent on the allowed independent claim 1 and are allowed at least for the reasons cited above.

II. The system in claim 10, for the controller system for use in the wellbore with the controller tool located in the well using the computer system including the downhole tool interface wherein the tool based microprocessor executes a program to initiate the downhole tool based on the recognition of a previous unknown tool command signal wherein the microprocessor recognizing of the command signal is in response to the steps for detecting that the command signal has been repeated in explicit combination with the microprocessor detecting that the command signal has been repeated with steps for calculating a correlation coefficient and comparing the correlation to a

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reference value wherein the correlation coefficient is calculated based on steps for comparing a first portion of the command signal with a second portion of the command signal and using the result to actuate the drill bit tool in the formation is not found in the cited art of record.

It is these limitations expressed in each of these claims and not found, taught, or suggested in the prior art of record, that makes these claims allowable over the prior art.

Claims 11-13 and 24-25 are dependent on the allowed independent claim 10 and are allowed at least for the reasons cited above.

III. The method in claim 16, to determine if a previously unknown command signal has been issued into the wellbore to control the borehole tool using computational steps for taking data samples and computing the signal parameters using the data samples wherein the computed parameters comprise a first parameter for data samples in a first portion of the buffer and a second parameter for the data samples in a second different portion of the buffer with steps for comparing the first and second parameters and determining wherein the data samples in the data buffer correspond to a command signal based on the steps for comparing the data samples and using the result to actuate the drill bit tool in the formation is not found in the cited art of record.

It is these limitations expressed in each of these claims and not found, taught, or suggested in the prior art of record, that makes these claims allowable over the prior art.

Claims 17 and 26-27 are dependent on the allowed independent claim 16 and are allowed at least for the reasons cited above.

IV. The method in claim 18, used to control the downhole borehole tool with steps for using the tool controller and sensing a repeating control signal from a signal source to the controller located on the borehole tool wherein the signal samples are recorded in a buffer while the signal is being sent to the controller creating the upper and lower data profiles in the data buffer on the controller located on the tool in the borehole wherein the steps for comparing the upper profile to the lower profile is used to determine whether the profiles constitute a data match wherein the data match indicates the repeating signal is a command signal wherein the command signal was previously undefined at the controller and with the explicit steps for initiating actuation of the downhole tool if the match is found is not found in the cited art of record.

It is these limitations expressed in each of these claims and not found, taught, or suggested in the prior art of record, that makes these claims allowable over the prior art.

Claims 19-20 are dependent on the allowed independent claim 18 and are allowed at least for the reasons cited above.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor J. Taylor whose telephone number is 571-272-2281. The examiner can normally be reached on 8:00 to 5:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Barlow can be reached on 571-272-2863. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Victor J. Taylor

Examiner

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10/03/2006.

  
John Barlow  
Supervisory Patent Examiner  
Technology Center 2800